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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,892

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Moon-Soo Han

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EXAMINER

PENDLETON, DIONNE

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,892	<b>Applicant(s)</b> HAN, MOON-SOO	
	<b>Examiner</b> DIONNE H. PENDLETON	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Response to Arguments**

1. Regarding the Applicant's remarks pertaining to Examiner's **Rejection under 35 USC 112** in the official action mailed 7/7/10:

Applicant submits that support may be found in the Preliminary Amendment filed January 17, 2006 for the claimed, "a servo to...generate a track jump start control signal if it is judged that the current position of the pickup, at the time of the track jump command, is within a reference range..." Applicant specifically points to a recitation of "judging whether a position of the pickup is within a predetermined range relative to a center of a track at a time of a track jump command", as lending said support. Applicant further submits that the analysis of a "position" pertains to an analysis of the position of the pickup when the track jump command is received. Therefore, based upon the Applicant's clarification of the recited language, the Examiner has interpreted the claimed invention as being drawn to analyzing a "current position", where the "current position" is the position of the pickup at the time the track jump command is received.

2. Regarding the Applicant's remarks pertaining to Examiner's **Rejection under 35 USC 103** in the official action mailed 7/7/10:

Applicant's arguments with respect to the prior art rejections of claims 1-16 have been considered. Applicant submits that by Examiner's own admission in the Office Action of December 14, 2009, that none of the cited references disclose or suggest "judging whether a position of the optical pickup is within a predetermined range relative to a center of the track at a time of a track jump command". However, in the Official Action dated July 7, 2010, in addition to rejecting the claims under USC 112, the Examiner also submitted that the prior art of record

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discloses the Applicant's claimed invention. The following detailed rejection clearly cites those portions of the previously relied upon prior art which disclose the Applicant's claimed invention. The Examiner's prior art rejection is therefore maintained and made final.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aoe (US 2004/00130057)** in view of **Hong (Patent Number 7,012,861)** and **Akiyama (Patent Number 5,712,835)**.

**Regarding apparatus claim 1 and method claim 4,**

**AOE** teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup ("**14**" in **figure 7**) to read a signal from an optical disc;

an RF processing unit ("**16**" in **figure 7**) to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup ([**0047**]);

a servo ("**18**") to judge a position of the pickup based on the error signal ([**0047**]);

and a driver to move the pickup ([**0047**] teaches moving the pickup for tracking/focusing control).

Aoe fails to expressly teach that the servo receives a track jump command to generate a track jump start and end control signals if it is judged that the current position of the pickup, at the time of the track jump command, is within a reference range.

**HONG** teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup (**“202” in figure 5**) to read a signal from an optical disc;

an RF processing unit (**“203”, in figure 5**);

a servo (see **combination of elements 205 and 206 in Figure 5**) to judge a current position of the pickup based on the error signal (**column 7:30-32**) and receive a track jump command to generate a track jump start control signal (**col. 7:34-36 teaches that microcomputer controls the track jump; col. 8:47-52 teaches that microcomputer outputs track jump command to servo**) if it is judged that the current position of the pickup, at the time of the track jump command, is within a reference range (**column 5, lines 29-37, claim 1 and claim 29, all teach checking whether a current location is *within a reference range*, see “ the end of a header area”, when the track jump command is received; and performing a track jump when the current location is *within a reference range*, see “ the end of a header area”, as claimed**), and generate a track jump end control signal (**column 7, line 64 through column 8, line 3, discloses generation of a kick pulse and brake pulse *under the control of controller “206”***);

and a driver (**“210” in figure 5**) to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the teachings of Aoe per the teachings of Hong, such that the device of Aoe includes a

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servo operating to generate track jump start command when the current position of the pickup is within a predetermined range, thereby preventing the system from being unstable due to a header.

Aoe and Hong, in combination, fail to expressly teach that the current position of the pickup is judged based upon an error signal.

**AKIYAMA** teaches an optical disk drive apparatus wherein in an access operation from a position P2 to a target position P3, and by using an error signal (see “TES” signal) the light spot is correctly positioned in the center of the track before the start of the track jump (**column 4, lines 59-66, column 7, lines 14-25, column 8, lines 62-65 and column 9, lines 6-11**). Akiyama therefore recognizes a need in the art for judging the position of the pickup based upon an error signal, prior to generating a track jump start signal (**column 4, lines 59-66; column 6, lines 1-5 teach TES signal**).

It would have been obvious for one of ordinary skill in the art at the time of the invention to further modify the invention of AOE modified by Hong by using an error signal for judging the current position of the pickup as taught by AKIYAMA in order to improve the accuracy of the track jump operation by accurately detecting current position of the pickup.

#### **Regarding claim 2,**

Akiyama teaches wherein if the judged position of the pickup unit is within the reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver (**column 9:5-11 discloses that the light spot must be appropriately positioned before the second track jump**).

**Regarding claim 3,**

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches that if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver **(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)** until the judged position of the pickup is within the reference range **(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., “within the reference range” before the second track jump commences).**

**Regarding claim 5,**

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches wherein if the judged position of the pickup unit is within the reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned before the second track jump);**

and if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver **(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)** until the judged position of the pickup is within the reference range

(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., “within the reference range” before the second track jump commences).

**Regarding claim 7,**

Hong teaches a controller (**209 in figure 5**) outputs a track jump start signal to the driver, sets an output time of the track jump-end signal (**column 7:64 – column 8:3**), and calculates a target track to be jumped (**Hong discloses that a TZC signal is used as a reference signal for controlling a kick pulse, brake pulse and a brake time during a track jump, thus implying that the target track is “calculated” so as to accurately reach the target track during an access operation.**)

**Regarding claim 8,**

Hong teaches the apparatus of claim 6, wherein: the controller outputs the track jump end signal to the driver when the optical pickup arrives at the target track (**column 9:39-55**).

**Regarding claims 6 and 9,**

AOE teaches an apparatus operating according to a method, the apparatus performing track jumping and comprising:

an RF processing unit (**“16” in figure 7**) to generate a positional error signal based on the output signal of a pickup (**“14” in figure 7**);

a servo (“18”) to judge a current position of the pickup relative to a track of the optical disc based on the positional error signal ([0047]) and to output a tracking control signal to control a position of the optical pickup based on the judged current position ([0047] disclose **TE signal which controls the pickup based upon the judged current position**);

and a driver to control the pickup using the tracking control signal from the servo ([0047] teaches moving the pickup for tracking/ focusing control);

Aoe fails to expressly teach a controller which operates as specifically claimed.

**HONG** teaches an apparatus for performing track jumping, the apparatus comprising:

an RF processing unit (“203”, in figure 5) and a pickup (“202” in figure 5);

a servo (see combination of elements 205 and 206 in Figure 5) to judge a current position of the pickup and receive a track jump command to generate a track jump start control signal ([0047] disclose **TE signal which controls the pickup based upon the judged current position**);

a driver (“210” in figure 5); and

a controller to monitor the control signal and to control the track jumping based on the control signal (see the “controller” of claim 29 which operates control track jumping based upon the current location), wherein:

if the controller determines that the tracking control signal indicates that the current position of the optical pickup is within a predetermined range when a track jump command is received by the controller, the controller immediately outputs a track jump start signal as claimed (column 5, lines 29-37, claim 1 and claim 29, all teach checking whether a current location is within a reference range, see “ the end of a header area”, when the track jump command

is received; and performing a track jump when the current location is within a reference range, see “the end of a header area”, as claimed), and if the controller determines that the current position is not within the predetermined range, see "header area", the controller delays the track jump start signal until the current position is within the predetermined range (**claim 1 teaches standing by without performing a track jump when the current location of the pickup head is not within the predetermined range, see “the end of the header area”**).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the teachings of Aoe per the teachings of Hong, such that the device of Aoe includes a servo operating to generate track jump start command when the current position of the pickup is within a predetermined range, thereby preventing the system from being unstable due to a header.

Aoe and Hong, in combination, fail to expressly teach that the controller uses a tracking control signal to control the track jumping or that the controller determines whether or not the pickup is within a predetermined range of the center of the track prior to outputting a track jump start control signal.

**AKIYAMA** teaches an optical disk drive apparatus wherein in an access operation from a position P2 to a target position P3, a tracking control signal (**see “TES” signal**) is used so that the light spot is correctly positioned in the center of the track before the start of the track jump (**column 4, lines 59-66, column 7, lines 14-25, column 8, lines 62-65 and column 9, lines 6-11**). Akiyama recognizes a need in the art for judging the position of the pickup based upon a tracking control signal, prior to generating a track jump start signal (**column 4, lines 59-66; column 6, lines 1-5 teach TES signal**).

It would have been obvious for one of ordinary skill in the art at the time of the invention to further modify the invention of AOE modified by Hong per the teachings of AKIYAMA, such that an error signal is also used for judging the position of the pickup at the time of a track jump command, thereby improving the accuracy of the track jump operation.

**Regarding claims 10-12,**

Hong teaches that a track jump signal including a kick pulse/voltage and a stop pulse i.e., “brake voltage” may be used to accurately achieve track jump operations. (**column 7: 64 - column 8:3**).

**Regarding claim 13,**

Akiyama teaches delaying the outputting of the track jump command to the optical pickup until the optical pickup is within a predetermined range (**Akiyama teaches that the beam spot must be centered on the track prior to commencement of the final jump, see column 4:56-60**); and teaches outputting the track jump command to the optical pickup while the optical pickup is within the predetermined range (**column 4:63-66**).

Hong teaches delaying the outputting of the track jump command to the optical pickup until the optical pickup is within a predetermined range (**see claim 1**); and teaches outputting the track jump command to the optical pickup while the optical pickup is within the predetermined range (**claim 1; claim 29**).

**Regarding claims 14 and 16,**

The grounds for rejection of claims 14 and 16 are set forth in the rejections of claims 10-12, above.

**Regarding claim 15,**

Akiyama teaches that the track jump command causes the optical pickup to start moving toward a target track of the optical disc (**see column 5:1-2**); and while Hong teaches the method further comprises outputting a track jump stop command to the optical pickup when the optical pickup arrives at the target track (**Hong, see discussion of brake pulse in column. 8:1-3**).

**Conclusion**

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/  
Examiner, Art Unit 2627

/Thang V. Tran/  
Primary Examiner, Art Unit 2627